
Subject: Identify whether value is integer in IF statement
Posted by [jecca.baker](#) on Tue, 09 Jun 2015 13:49:25 GMT
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I'm trying to automate identification of leap years.

I was thinking something like:

```
FOR YR=0, 10-1 DO BEGIN
YEAR=2001+YR
IF (YEAR/4) EQ ?an integer? THEN BEGIN
*
*
*
ENDIF
ENDFOR
```

How do I identify whether YEAR/4 is an integer (ie a leap year)?

Thanks.

Subject: Re: Identify whether value is integer in IF statement
Posted by [Heinz Stege](#) on Tue, 09 Jun 2015 13:56:48 GMT
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On Tue, 9 Jun 2015 06:49:25 -0700 (PDT), Jess wrote:

```
> How do I identify whether YEAR/4 is an integer (ie a leap year)?
>
if year mod 4 eq 0 then begin
```

Subject: Re: Identify whether value is integer in IF statement
Posted by [Helder Marchetto](#) on Tue, 09 Jun 2015 14:05:13 GMT
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On Tuesday, June 9, 2015 at 3:49:27 PM UTC+2, Jess wrote:

```
> I'm trying to automate identification of leap years.
>
> I was thinking something like:
>
> FOR YR=0, 10-1 DO BEGIN
> YEAR=2001+YR
> IF (YEAR/4) EQ ?an integer? THEN BEGIN
> *
> *
```

```
> *
> ENDIF
> ENDFOR
>
> How do I identify whether YEAR/4 is an integer (ie a leap year)?
>
> Thanks.
```

One way would be to use the `isa()` function with the `/integer` keyword. But...
when you calculate `year/4` you will always get an integer because an integer divided by an integer is still an integer:

```
IDL> for yr=0,9 do help, (2001+yr)/4
<Expression>  INT    =    500
<Expression>  INT    =    500
<Expression>  INT    =    500
<Expression>  INT    =    501
<Expression>  INT    =    501
<Expression>  INT    =    501
<Expression>  INT    =    501
<Expression>  INT    =    501
<Expression>  INT    =    502
<Expression>  INT    =    502
<Expression>  INT    =    502
```

What you really want is probably is to check if 4 is a divisor of year. To check for this condition, you can use the "mod" operator (see http://www.exelisvis.com/docs/Mathematical_Operators.html).
Then you can check with
if (YEAR mod 4) eq 0 then ...

Cheers,
Helder

PS: Ups, too late, Heinz was faster...

Subject: Re: Identify whether value is integer in IF statement
Posted by [jecca.baker](#) on Tue, 09 Jun 2015 14:18:15 GMT
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Great, thanks both of you! :-)
